

Christopher Kitras

(435) 233-6169 | kitras.dev | chkitras@gmail.com | linkedin.com/in/christopher-kitras

EDUCATION

Brigham Young University – Fulton College of Engineering

- PhD Electrical and Computer Engineering (3.97/4.00)
- BS Computer Engineering (3.6/4.0)

Provo, UT
April 2026
December 2021

COMPUTER/TECHNICAL SKILLS

- Python
- C/C++/CUDA
- Linux/Bash
- Systems Design
- Computer Networks
- AVR/ESP
- InfluxDB/Grafana
- HDL Programming

ENGINEERING EXPERIENCE

Project: Radon Mitigation through Optimized HVAC Scheduling December 2023 - Present

Objective: Designed a system to reduce radon levels to healthy limits in a large structure without modifying original architecture.

- Optimized monitor selection, choosing a cost-effective yet high-performance SunRADON device to balance budget and system needs
- Engineered a Python-based client to interface with an undocumented API lacking official clients
- Formulated an algorithm to project optimal HVAC scheduling for radon mitigation
- Collaborated with a cross-disciplinary team of engineers and environmental scientists
- Awarded Best Poster at S4S 2024

Project: Location Verification of Crowd-Sourced Sensors April 2022 - July 2023

Objective: Devised a software-based solution for precise device location using traceroute data

- Streamlined location determination with minimal firmware changes avoiding hardware alterations
- Created a secure registration process to associate location info with sessions
- Led algorithm creation to monitor routing path changes and detect location shifts
- Conducted experiments to assess algorithm performance
- Authored and published research on framework in ICCCN 2023

Project: Mongolia Air Quality Monitoring April 2019 - August 2023

Objective: Developed a cost-effective air quality monitor to gauge effectiveness of energy-efficient housing versus traditional housing.

- Gained proficiency in the Particle microprocessor platform and its associated web-console
- Oversaw sensor fleets using cloud tools, including executing over-the-air updates
- Optimized sensor firmware for modular design, allowing for new peripherals without redesign
- Refined cloud data transfer efficiency by integrating buffering services such as Google PubSub
- Analyzed and processed recorded data and contributed to publication in MDPI Sensors journal

LEADERSHIP

- Lead Research Student, IoT Resilience, Network Enhanced Technologies Lab
- President Emeritus and Officer, Brigham Young University Linux Club
- Oversee welfare and administrative operations in a local congregation
- Staff at IMMERSE Chip Camp and UTOS OpenWest Conference

WORK HISTORY

- *PhD Student*, IoT Systems Resilience Research, Brigham Young University 2022 - Present
- *Instructor*, ECEN 224 Lab and Recitation, Brigham Young University 2023
- *Research Assistant*, Air quality firmware development, Brigham Young University 2020 - 2022
- *Instructional Aide*, Fundamentals of Digital Systems, Brigham Young University 2019 - 2020
- *Research Assistant*, Heterogeneous Debugger GUI, Brigham Young University 2019
- *Lab Intern*, Virtualization Lab, SUSE Linux (Provo) 2018 - 2019